

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A lithium battery separator having a shutdown function, and comprising a porous carrier having a porous inorganic, nonelectroconductive coating layer on and in said carrier, and wherein ~~characterized in that~~ a shutdown layer of shutdown particles, which melt at a predetermined temperature and close the pores of said inorganic layer, is present on said inorganic layer and bonded thereto.

Claim 2 (Currently Amended): The A separator according to claim 1, wherein ~~characterized in that~~ said carrier is flexible and less than 50 μm in thickness.

Claim 3 (Currently Amended): The A separator according to claim 1 ~~or 2~~, wherein ~~characterized in that~~ said carrier comprises woven or non-woven polymeric or glass fibers.

Claim 4 (Currently Amended): The A separator according to claim 3, wherein ~~characterized in that~~ said carrier is a polymeric nonwoven.

Claim 5 (Currently Amended): The A separator according to claim 3 ~~or 4~~, wherein ~~characterized in that~~ said polymeric fibers are selected from fibers of polyacrylonitrile, polyester, ~~and/or~~ polyolefin or mixtures thereof.

Claim 6 (Currently Amended): The A separator according to claim 1 ~~at least one of claims 1 to 5~~, wherein ~~characterized in that~~ said carrier is less than 30 μm in thickness.

Claim 7 (Currently Amended): ~~The A separator according to claim 1 any one of claims 1 to 6, wherein characterized in that~~ said porous inorganic coating layer, present on said carrier, comprises oxide particles of the elements Al, Si and/or Zr from 0.5 to 10 μm in size on average.

Claim 8 (Currently Amended): ~~The A separator according to claim 1 at least one of claims 1 to 7, wherein characterized in that~~ said shutdown particles have an average size (D_w) which is greater than the average pore size (d) of said pores of said porous inorganic layer.

Claim 9 (Currently Amended): ~~The A separator according to claim 8 at least one of claims 1 to 8, wherein characterized in that~~ the layer of shutdown particles has a thickness (z_w) which is approximately in the range from said average size of said shutdown particles (D_w) up to 10 times said particle size D_w .

Claim 10 (Currently Amended): ~~The A separator according to claim 1 at least one of claims 1 to 9, wherein characterized in that~~ said shutdown particles are selected from polymers, polymer blends, natural waxes or artificial waxes.

Claim 11 (Currently Amended): A process for producing a separator having a shutdown function, comprising, applying and fixing ~~which comprises~~ shutdown particles having a defined, desired melting temperature ~~being applied to and fixed on to~~ a porous inorganic layer of a separator.

Claim 12 (Currently Amended): A separator prepared by the process according to claim 11, for producing a separator as claimed in at least one of claims 1 to 12 and wherein said separator has a shutdown function, and comprises a porous carrier having a porous inorganic, nonelectroconductive coating layer on and in said carrier, and wherein a shutdown layer of shutdown particles, which melt at a predetermined temperature and close the pores of said inorganic layer, is present on said inorganic layer and bonded thereto.

Claim 13 (Currently Amended): The A process according to claim 11 or 12, further comprising, hydrophobicizing said porous inorganic layer being hydrophobicized before said shutdown particles are applied to it.

Claim 14 (Currently Amended): The A process according to claim 11 any one of claims 11 to 13, further comprising treating said porous inorganic layer being treated with an adhesion promoter before said shutdown particles are applied to it.

Claim 15 (Currently Amended): The A process according to claim 14, further comprising, producing said porous inorganic layer being produced by using a polymeric sol comprising a silane adhesion promoter for said shutdown particles to be applied later.

Claim 16 (Currently Amended): The A process according to claim 11 one of claims 11 to 15, further comprising, generating a said layer of shutdown particles being generated by applying to said porous inorganic layer a suspension of shutdown particles, having an average size larger than the average pore size of the separator layer, and wherein said in a suspension medium is selected from a sol, water or alcohols.

Claim 17 (Currently Amended): The A process according to claim 16, wherein said suspension comprises an adhesion promoter.

Claim 18 (Currently Amended): The A process according to claim 17, further comprising, selecting said adhesion promoter from hydrolyzed or nonhydrolyzed functionalized alkyltrialkoxysilanes.

Claim 19 (Currently Amended): The A process according to claim 16 ~~any one of claims 16 to 18~~, further comprising, applying said suspension ~~being applied~~ to said porous inorganic layer by printing on, pressing, pressing in, rolling on, knife coating on, brushing on, dipping, squirting, spraying or pouring on.

Claim 20 (Currently Amended): The A process according to claim 16 ~~at least one of claims 16 to 19~~, further comprising, obtaining said layer of shutdown particles ~~being obtained~~ by drying said applied suspension ~~being dried~~ at a temperature in the range from room temperature to 100°C.

Claim 21 (Currently Amended): The A process according to claim 11 ~~at least one of claims 11 to 20~~, further comprising, fixing ~~following application~~ said particles ~~being fixed~~ on said porous inorganic layer by single heating to a temperature above the glass transition temperature to fuse on said particles without changing the actual shape.

Claim 22 (Currently Amended): The A process according to claim 11 ~~at least one of claims 11 to 21~~, wherein said shutdown particles are selected from particles comprising

~~composed of~~ polymers, polymer blends, natural waxes, ~~and/or~~ artificial waxes or mixtures thereof.

Claim 23 (Currently Amended): The ~~A~~ process according to claim 22, wherein said shutdown particles are particles ~~composed of~~ comprising polyethylene wax.

Claim 24 (Currently Amended): A process of preparing a battery, comprising, inserting the ~~The use of~~ a separator as claimed in claim 1 into a battery cell ~~at least one of claims 1 to 10 as a separator in lithium batteries.~~

Claim 25 (Currently Amended): A battery comprising the a separator as claimed in claim 1, and one or more additional components ~~at least one of claims 1 to 10.~~